

2001 REVIEW

Abrams Tank Fires

How can you prevent them?

by Gregory Skaff and MAJ Dennis P. Finn, Retired



The Armor Corps has suffered 45 reported Abrams tank fires from January through December 2001. Over the past 22 years, we've experienced more than 600 fires since the Abrams joined the Army tank fleet. Some were minor incidents that required only the replacement of a few parts to restore the tank to a fully mission-capable status, while others destroyed the tank.

Abrams tank fires typically do not result in soldier injuries or fatalities, but the potential is always there. Materiel costs are a different story: a very small fire on these vehicles can quickly cost thousands of dollars in just a couple of minutes. During the past year, efforts to eliminate contributing factors resulted in NBC/firing training and a new hydraulic pump case drain quick disconnect.

Figure 1 is a snapshot of the total number of Abrams fires by year, covering the past 22 years. Trends can, and often do, provide us with lessons learned that aid in the development of new procedures, improved parts, and/or future fires.

Figure 2 depicts an unsettling number of incidents of fire damage, which would be equivalent to losing a tank battalion's worth of tanks. Imagine losing your entire battalion without ever making enemy contact!

A tremendous number of variables led to the causes of these fires. Some are caused by mechanical flaws and some by human error. Team Abrams investigates all reported fires and pursues possible corrective actions or design changes to eliminate future problems. In the course of investigating reported fires, Team Abrams takes the following actions at a minimum:

- A failure analysis on specific hardware
- Unit visits and random inspection of numerous tanks across the fleet
- A review of historical records of tank fires in the fire database.

Current projections indicate that the Abrams tank will remain in active service until at least 2030. In order for our fighting force to remain in the best state of readiness possible, several measures have already been taken over the past year to reduce or eliminate Abrams tank fires. All armor units throughout the world received NBC and Fire Prevention training during the past 18 months, sponsored by the Program Manager's office for Abrams tanks. This was followed by the redesign and free issue of the hydraulic pump case drain quick disconnect (QD). The QD, NSN 4730-01-473-3069, featured in

the January 2002 issue of *PS Magazine*, outlines the problem and corrective action for units to take.

While investigations revealed no systematic materiel cause(s) associated with the recent increase in Abrams fires, there are several possible contributing factors, which are being further investigated and addressed. Fleet aging, high mileage, component wear-out, the extent of PMCS and detail services continue to top this list. These factors are not new and the best approach to mitigating these factors is user awareness and swift corrective action.

Random failures and isolated quality issues have caused a very small number of fires. This category tends to be the exception rather than the norm. There are tanks operating in the fleet today that have serious maintenance shortcomings and are potential fire casual-

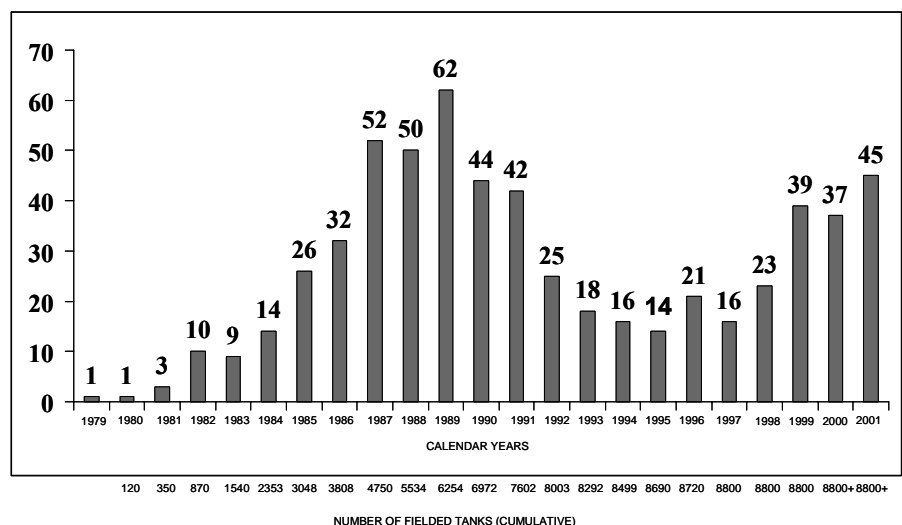


Figure 1: Abrams Fires Reported by Calendar Year

Abrams Tank Fires by Subsystem Jan - Sep 2001

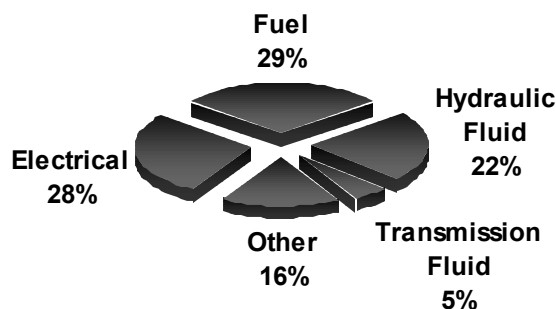


Figure 2

ties. Units *must* adhere to their PMCS inspections and their non-mission capable criteria. This addresses fire sensors, grounding wires, NBC system components, RTV, and unauthorized modifications, just to list a few.

The fire causes are strictly random and have been throughout the life of the Abrams tank, as depicted in the first chart.

There is no single fire category that stands out as *the* prominent area of concern. However, an NBC System fire still exposes users to high risk and requires our serious attention. Besides applying very thorough PMCS and service checks, there are no indicators that can alert crews to the fact that they will have a fire. The Modification Block applications previously applied are not linked to any fire occurring to date.

With these facts in mind, it is essential that every user:

- Assist us in reporting abnormal operations or conditions through the chain of command and unit maintenance

office. Units can also report unusual and repeated malfunctions through the Field Problem Review Board by calling 1-800-989-TANK (1-800-989-8265).

- Adhere to Safety-Of-Use, Ground Precautionary, Maintenance Advisory messages, and Operator and Maintenance manuals.
- Rehearse emergency procedures and evacuation procedures regularly.
- Take action regarding other prominent safety hazards besides fires (i.e., use of travel locks, hatch condition, bolt accountability, warning light bulb color and condition, and hose sizes and condition, again just to highlight a few).
- Report all accidents/fires, regardless of how small, IAW local command policy and AR 385-40, *Accident Reporting and Records*.

The Abrams Team is committed to the fact that this tank is the best in the world and it must be totally accepted by you, the users, in every aspect of its operation and maintenance. We will

continue to address the trends and inform you of efforts to maximize the tank's capabilities and superiority. To see what we are tracking in the Field Problem Review Booklet, go to the web page of the TRADOC System Manager for Abrams tanks at <http://147.238.100.101/center/tsmabrams> and click on the FPRB link. The FPRB meets quarterly and covers all Abrams tank-related problems with fielded systems. Your issues are vital to the success of the tank program and we need to hear from you.

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Polish Army T-55s...Going Once....Going Twice..

The Polish military agency in charge of selling surplus equipment has announced the auction of some of the army's T-55s at a time when heavy snowfalls have paralyzed the country, according to a story that appeared in the *Washington Times*. Offered at \$6,865 apiece, the agency suggested they could be useful in plowing snow, building dikes, or firefighting.

